

<p>COMPONENTS:</p> <p>(1) Potassium hexanoate (potassium caproate); ($C_6H_{11}O_2$)K; [19455-00-6]</p> <p>(2) Sodium hexanoate (sodium caproate); ($C_6H_{11}O_2$)Na; [10051-44-2]</p>	<p>EVALUATOR:</p> <p>Schiraldi, A., Dipartimento di Chimica Fisica, Universita' di Pavia (ITALY).</p>
<p>CRITICAL EVALUATION:</p> <p>This system was studied only by Pochtakova (Ref. 1), who claimed the existence of a continuous series of solid solutions.</p> <p>Both components, however, form liquid crystals (see Preface, Table 1). Consequently: (i) the fusion temperatures, $T_{fus}(1) = 717.7$ K (444.5 °C) and $T_{fus}(2) = 638$ K (365 °C) given in Ref. 1 are actually to be identified with the clearing temperatures (the corresponding values from Table 1 of the Preface being 725.8 ± 0.8 K and 639.0 ± 0.5 K, respectively); (ii) the transition temperatures $T_{trs}(1) = 575$ K (302 °C) and $T_{trs}(2) = 499$ K (226 °C), quoted in Ref. 1 from Ref. 2, are in turn to be identified with the fusion temperatures (the corresponding values from Table 1 of the Preface being 581.7 ± 0.5 K and 499.6 ± 0.6 K).</p> <p>Finally, the following point deserves attention. Two more transitions are quoted in Ref. 1 from Ref. 2 as occurring in component 2 at 615 K (342 °C) and 476 K (203 °C), respectively. The latter one corresponds to that reported at 473 ± 2 K in Table 1 of the Preface, whereas no evidence was obtained by subsequent investigators (Ref. 3) for a transition comparable with the former one: should it exist, it might mean that two different mesomorphic phases are present in sodium hexanoate.</p> <p>As a conclusion, in the evaluator's opinion Pochtakova's data support reasonably the idea that continuous series of liquid crystal (instead of solid) solutions are formed, and the phase diagram ought to be not far from that shown in Preface, Scheme C.1.</p>	
<p>REFERENCES:</p> <p>(1) Pochtakova, E.I. Zh. Obshch. Khim. <u>1959</u>, 29, 3183-3189 (*); Russ. J. Gen. Chem. (Engl. Transl.) <u>1959</u>, 29, 3149-3154.</p> <p>(2) Sokolov, N.M. Tezisy Dokl. X Nauch. Konf. S.M.I. <u>1956</u>.</p> <p>(3) Sanesi, M.; Cingolani, A.; Tonelli, P.L.; Franzosini, P. Thermal Properties, in Thermodynamic and Transport Properties of Organic Salts, IUPAC Chemical Data Series No. 28 (Franzosini, P.; Sanesi, M.; Editors), Pergamon Press, Oxford, <u>1980</u>, 29-115.</p>	

